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ORIGINAL ARTICLES.

Some Neglected Non-Medicinal Agents in the Successful Treatment of Nervous and Mental Diseases.¶

BY JOHN PUNTON, M.D., KANSAS CITY, MO.

Read at the Thirty-first Annual meeting of the Kansas Medical Society, Topeka, May 12-14, 1897.

Gentlemen: In science, art and literature the closing days of the nineteenth century furnishes us a brilliant series of triumphs and wonderful achievements unsurpassed in any previous period of the world's history.

He who, therefore, undertakes the pleasing task of tabulating it's glorious victories will find that those which take precedence of all others are those which have conferred the greatest blessings to mankind, and these essentially belong, and form a part of the science of medicine.

This statement, which at first sight may appear unwarranted, and even egotistical, is boldly made in spite of the fact that we as a profession are openly accused of being disloyal citizens, by becoming selfish and avaricious, and thus sacrificing the former dignity which belongs to our noble science, besides reducing its practice to a mere trade or commercial calling. That there are individuals in the medical profession who do not hesitate to disgrace its noble tenets, and forfeit all that is embodied in its sacred principles for the sake of money-getting, we regret to admit. But while such persons enjoy the privilege, and distinction of being called "doctor," they are in no sense true members of the profession, and their names are not enrolled among those who devote their lives for the good of humanity.

The true principles of the science and art of medicine, as well as its progress and present development, is as unknown to them as the more ignorant of the laity; hence it is not strange that they often claim to possess the power of curing diseases, which by the very nature of their pathological character render them incurable, besides failing to recognize the true significance of certain symptoms by their lack of histological knowledge, and consequent use of a false system of nosology.

That such facts has long been known to us is idle comment, yet the power of discrimination on the part of the laity is often so very dull and stupid, that many of them actually fail to recognize the true fact from the false, the genuine from the counterfeit, even in its most flagrant forms; and about all the evidence that is needed to satisfy their idea of a physician is any person who answers to the name of "doctor," whether he be fully qualified or not.

As a result of such misplaced confidence or false conception, the most serious blunders often occur even to many of the seeming more intelligent laity; and as these mistakes have become so very prevalent and wide spread, a general distrust on the part of the public in the virtue, and efficacy of the science of medicine, as well as its disciples, have gradually been engendered, which again has been the means of fostering, and encouraging the inauguration of several so-called sure cures, such as osteopathy, faith cure, Christian science, etc. All of which undertakes to practice medicine without the use of drugs, much less the scientific principles which form the basis of all true medical knowledge.

The apparent success which has attended the efforts of each of these fads, is familiar

to you all, and it is easy to understand how much more ready the public are prepared to receive and believe in that which promises so much by simple methods, irrespective of actual results or the underlying conditions which must surely be met by a more rational system. Moreover, this false conception of the true merits of the science of medicine by the general public, we ourselves are partly responsible for. Not until we as a profession are prepared to recognize in our own ranks the gross ignorance, and lack of application in diseased conditions of the up to date scientific knowledge embodied in the true science of medicine, can we ever hope to overcome this great lack of confidence on the part of the public, not only towards the science of medicine itself, but also the medical profession as a whole.

A very convenient screen used by many to cover their ignorance is the oft-repeated statement that medicine is not an exact science, hence failures are inevitable. But more often it is not the science of medicine that fails, for this is more exact than we are wont to allow, but it is the doctor himself who fails to apply the correct scientific principles, which the later investigations demonstrate beyond a doubt to be the more certain and reliable.

In its earlier career the science of medicine was much more simple, and limited in its general fund of knowledge, and consequently its practice was, comparatively speaking, a trivial affair. But just in proportion as our knowledge of diseased conditions increased, the greater the task its study became, until to-day it is generally conceded that no one single mind is able to acquire, or even comprehend all the scientific facts included in its range.

Hence in order to further cultivate its growth and development, it becomes an urgent necessity to divide the science of medicine into several distinct departments or specialties which have been in active operation for several years, and the acumulated wealth of facts belonging to each when applied to certain cases, renders a successful issue the more certain.

Admitting, therefore, that no one mind is capable of acquiring the whole science of medicine, it is the business and duty of the physician, to not only master the fundamental principles, which underlie each department, but constantly keep in touch with their latest developments in order that he may the more ably insure the lives of his patrons under all conditions and circumstances.

To my mind the greatest evil therefore that the layman has to fear, is in employing a doctor who fails to recognize the force and influence, as well as the necessity of the fuller knowledge and experience, which the various special departments of medicine offer him in combatting with the more serious forms of disease.

Hence we find such men often undertaking to treat diseases the nature of which they know scarcely anything about. This necessarily brings undeserved reproach upon the true science of medicine, and also reflects upon the good name and standing of the profession as a whole. Perhaps in no department of medicine are such mistakes more prone to occur than in dealing with the various forms of nervous and mental diseases. Indeed failures have become so very common in this department that many otherwise good physicians have been led to sneer and scoff at neurology, and say to its followers, about all you can do is to make a diagnosis, and offer a bad prognosis.

Well after all, gentlemen, this is saying a good deal, for many so-called physicians cannot even do that much. But such remarks as these are born of ignorance, and are not in accord with facts. On the other hand, it is very amusing to watch these same persons fail to make a diagnosis in many of the more common diseases of the nervous system, much less succeed in relieving them, showing at once by this their faulty methods, as well as ignorance of the science of neurology and psychiatry.

It is an open secret, however, with the very best men of our profession, that is to say the ablest clinicians and diagnosticians, that their success in practice depends very largely upon their knowledge of the nervous system, and its diseases, for they recognize

that the whole practice of medicine is rapidly becoming reduced to one of neurological methods. Failure to apply, and keep in touch with many of the more practical hints furnished by the experienced neurologist, renders many a curable case beyond hope. For instance, in many of the more obscure forms of nervous disease medicines play a secondary part, and non-medicinal agents are exceedingly important.

Neglect of the latter renders the former useless. It is the purpose of this paper, therefore, to call your attention to a few of the neglected non-medicinal agents, which play a very important role in the successful treatment of certain forms of nervous and mental diseases, which the science of neurology and psychiatry plainly teach, and which unfortunately are not given the prominent place they richly deserve in our text-books.

To my mind one of the most neglected non-medicinal agents, and one whose importance can scarcely be over-estimated in certain cases, is that of *isolation*. In my opinion, the medical profession has yet some very valuable lessons to learn, concerning the efficacy of this great remedial agent. The removal from home of the patient suffering from certain forms of nervous and mental diseases is not only of great benefit of itself, but affords the physician a favorable opportunity for influencing the mind, and to this quite often the unquestionable success of the treatment is largely due. There are several good reasons why this is necessary to be done in order to secure a successful issue in many nervous disorders. In most cases the condition of home life in which the disease developed is not favorable to recovery. Quite often the home life presents the two extremes of indulgence and irritability.

In the former case the apparent distress of the patient often appeals to the sympathy of not only every member of the family, but the neighbors, and indeed all who come within their range; while in the other case the long continuance, and multiplicity of the symptoms, with their varying degrees of apparent severity, soon brings about a spirit of rebellion and strife on the part of the friends, as well as a disposition to regard the case as hopeless on account of the great expense and trouble they have already been put to, and consequently little further effort is made to offer relief. Both these conditions, however, tend to make the patient worse, hence the removal from home is plainly indicated. Occasionally all that is needed is a wise change of scene and surroundings to effect a cure. In severe cases it is essential that the patient be not only removed from home, but placed in the care of strangers, and all relatives and friends should be rigidly excluded.

While I consider isolation one of the most powerful agents in the successful treatment of most forms of functional nervous disease, yet it is the most difficult one to put in force, by virtue of the refusal of the patients themselves, or their friends, to allow its enforcement. One reason for this is, perhaps, the expense involved; but more often it is due to the parents or friends failure to realize the wisdom or need of such a change. They seem to allow their sympathy or affection to dominate their better judgment, and no amount of reasoning on your part will do any good. The greatest difficulty, however, I find is with that class of people who have no family physician, or if they have one their confidence in his judgment is not sincere. Where the family physician enjoys the full confidence of his patrons then there is little difficulty, as a rule, to obey his instructions.

From a large amount of observation and experience I am satisfied that many a curable case becomes incurable, by failure to put in force early this most important agent we term *isolation*. To be effectual it must be, as a rule, absolute; that is to say, the friends of the patient must be rigidly excluded, as well as all other apparent irritants. The time required for its enforcement depends upon the conditions to be met, and as these differ in different cases, no definite rule can be given, but a little experience soon teaches the physician when it is safe to relinquish its use.

All kinds of excuses will be offered to the

physician to forego the necessity of removing his patient from home, and unless he asserts his own independence he will also yield by allowing his sympathy to rob him of his better judgment. Having secured the consent, however, of all parties interested to remove the patient from home, the next difficulty is to keep visitors away from the patient. Sometimes an injudicious remark from a friend will do more harm than can be overcome by several weeks first class care and treatment.

When everything is favorable, however, and the isolation complete, then another powerful non-medicinal agent can be put in force, which will also materially aid the successful issue of the case. I refer to *suggestion*. When this agent is used aright, it includes all the influences and possibilities of a strong and appropriate personality in both physician and nurse. Its judicious enforcement is even more difficult than isolation, tasking to the utmost the keen insight, knowledge, ingenuity and tact of both doctor and nurse.

In its essence it embraces all the influences included in the general term, hypnotism, for the substance of this is none other than suggestion. Associated with the term hypnotism, however, there has sprung up a false notion, which supposes that it consists of some mysterious element or power only known to those who profess to practice it. This false conception is heightened by the elaborate and mystical ceremonies made use of by the charlatan, but when shorn of all its nonsensical paraphernalia it can be used with as much potency by the family physician, as when attended by all this flourish of trumpets and gaudy show.

Its successful practice, however, depends entirely upon the physician's ability to influence the mind of the patient. And the first step in the process is to gain his or her full confidence, for experience proves that it requires more knowledge and tact to play upon the mind than upon the finest piano that was ever constructed The influence of mind on mind in its operations and results is greatly determined by the kind of means employed, as is the influence of mind on matter. Matter is influenced by mind through the tools that are used, and the tools must be adapted to the work. So it is with the influence of mind on mind. The means used by one mind to influence another mind varies as do means to influence matter, according to the nature of the mind to be influenced, and purposes to be realized.

Among the many means used to influence the mind are books, conversation, public speaking, education, music, poetry, art, inventions, manufactures, theatrical performances, gymnastic exercises and the public press. All these have their own sphere of usefulness, and many of them are applicable even in the sick room.

Not all physicians can use this mighty power of suggestion with success; hence they conclude that it is of no avail. But with many it is the most powerful agent they have at their command in the successful treatment of certain nervous diseases. For its best and lasting effects the patient should be isolated from home, and subject to the entire control of the physician.

Another important, neglected non-medicinal agent in the successful treatment of nervous and mental diseases is that of *rest*. In several forms of the so-called functional nervous affections, this agent constitutes the key note of my treatment. To be effectual it should be as near absolute as possible. Its enforcement, however, is equally as difficult as the other agents already referred to, indeed without its use in many cases all other means fail.

The class of patients that usually require it the most, however, are the very ones that raise the most serious objection to its enforcement. I have seen many a failure due purely to an inability to secure the full benefit of this potent agent. In many cases I place my patient to bed if I can. I say if I can, because my experience fully warrants the statement of Dr. Gray when he says, "There is a great difference in this respect between the two sexes, for it may be said in general terms that it is only too easy, as a rule, to get a woman to bed, and only too hard to get her out, while it is only too

hard to get a man to bed, and only too hard to keep him there. So that it is often useless to make the attempt with a man, while this may even be the case with some women."

Now it must be confessed that there are notable exceptions to this rule, for instance, I have at the present time three men and four women under observation, and I find much more difficulty in enforcing rest in bed with the women, than with the men. Many a woman rebels when forced to quit work, even when she fully realizes the necessity of its enforcement, while many others continue to over-work in spite of its being forbidden by the family physician. In many cases it is imposible to place the patient in bed; then the restrictions of nerve energy must be met in other ways. The amount of rest required for different cases appeals to the judgment and experience of the physician. Some conditions require it being prolonged for a greater length of time than others. A safe rule, however, is to require too much, rather than too little rest.

Another neglected agent, in my judgment, is the use of the *scales*. Very few physicians take the time and trouble to weigh their patients continuously for a series of weeks or months, and yet in order to give them the best chance of recovery this should be done.

It is a well known fact to neurologists, that the great majority of patients suffering from nervous and mental diseases are below par in body weight. This really means an impoverished condition of the blood, whereby its normal elements are either reduced in quality or quantity, or both, which results in loss of flesh and body weight. It is therefore a lesion of nutrition which can and should be remedied.

The value of this agent in the successful treatment of nervous and mental diseases cannot be over-estimated. For instance, no less an author than Clouston, in speaking of melancholy, which by-the-way is the commonest, and in its most simple form the sanest kind of insanity, states that, "When I see a patient taking on flesh at the rate of three or four pounds a week I know he is safe, and will make a good recovery."

Again, Dercum in speaking of the treatment of neurasthenia says, "I have learned to regard the progressive increase in weight as the most valuable index attainable, regarding the progress of a case. It is far more valuable than the persistence or non-persistence of such symptoms as backache or headache, or general nervous feeling."

It has been my practice to systematically weigh my patients suffering from hysteria, neurasthenia, chorea, traumatic neuroses and psychoses-melancholy, mania, etc., and the information thus afforded me proves a valuable guide in both the prognosis and treatment. Most patients recognize the fact that they have lost a large amount of body weight, and they also know their average standard. I am never satisfied until this standard has been reached, even if it takes months to accomplish the task; for of all patients, those suffering from nervous diseases take on body weight less rapidly than others, or as Clouston puts it, "The nervous diathesis does not put on fat naturally, therefore we must combat the tendency to innutrition by scientific dieting."

Diet, therefore, constitutes another neglected agent. If it be true that the majority of the more common forms of nervous and mental diseases present defects of nutrition, or suffer from an impoverished blood state, then it necessarily follows that a diet suited to remedy this condition is plainly indicated. For this purpose no agent has been so successful and satisfactory to me as the liberal use of milk and eggs. Indeed this constitutes my sheet anchor for most cases so far as food is concerned in the early stages. As an adjuvant to these in the course of the treatment I combine plenty of fresh air and sunshine.

It is not uncommon for patients to claim that they are unable to take milk, but this I find is usually more likely to be a notion than a genuine idiosyncrasy. As the case progresses I gradually introduce other foods with the milk and eggs. While doing this I am in the habit of using three other valuable agents, which are of great service in the successful treatment of nervous and

mental diseases. I refer to electricity, massage and hydrotherapy. It is surprising to find how few medical men understand the full force and power of electro-therapeutics. In spite of the fact that most physicians own a small faradic battery, very few of them know how to use it properly, much less the more powerful and complicated forms of galvanism.

Many physicians unfortunately have an idea that electricity is indicated in most diseases, hence, they either use it themselves or advise its use in almost all cases in which they are called. Others take the opposite extreme, and never use it for fear of betraying their own ignorance.

That there is a use for electricity in the practice of medicine, I think there can be no doubt, but its successful use is limited to certain well defined conditions, which have for their basis nutritional defects, and the secret lies in recognizing them.

Time forbids further enlargement, although there are several other agents which could profitably be mentioned, but if I have succeeded in calling your attention to a few of the more important agents, which in my judgment are greatly neglected in the treatment of the more common functional nervous diseases, the time devoted in preparing this paper will not altogether be spent in vain.

Animal Magnetism.

BY W. W. COCHRANE, ATCHISON, KAS.

Written for the Kansas Medical Society.

The profession of medicine claims to be scientific in theory if not in practice. Science inculcates the necessity of deciding questions by the force of verified facts relative to the origin, nature and phenomena of any or all subjects. Man visually and mentally observes manifestations and with hypothesis and theory decides that it is a rational phenomena. Science proving that the facts primary and proximate are truthful, stamps it as genuine. Without this endorsement no medical theory is worthy of study, as students have no time to waste in endeavoring to understand such problems as may rest on hypothesis alone. The recent past has been an age of medical iconoclasm. So many or our old panaceas have been declared inert or toxic that it behooves the progressive teacher to replace them with such new remedies as may have been more or less effective, as such has been the tirade against the old therapeutic remedies that it is impossible for the young physician to use them with the confidence that ensures success. It would seem imperative for medical teachers to instruct their pupils on all subjects having a bearing on the practice of their profession. Ever since the days of Mesmer there have appeared individuals who have given incontestible evidence of a power to so impress the mind of some persons as to radically change temporarily their thought and physical ability. This peculiar power has been so often and continously manifested to this populace by men, generally for lucre, that, although it is not understood by any and its verity doubted by many, is under varied forms and names gaining credence and not only wielding an influence on the populace as a diversion but has invaded the medical and legal professions. It has formed a religion which with creed and sectarian principles, is increasing in numbers so rapidly that orthodoxy, ignorant of its derivative origin, is uneasy if not appalled. If writers would accord and enunciate as a fact that mesmerism, animal magnetism, animal electricity, spiritualism, clairvoyance, mind-reading, biological attraction, odic force, somnambulism, healing hypnotism and telepathy are faculties or forces pertaining to a peculiar nervous system, it would embolden scientists to investigate properly each one of them and finally decide upon their scientific status; then the medical man would be enabled to express an opinion when asked, instead of at present acknowledging his ignorance on the subject; the lawyer would be enabled to give them their true value; and the orthodox would be relieved of their fright. Each one of these vague dogmas has been presented to the people with its several peculiar manifesta-

tions, and has secured such credence as to create a sort of craze in large numbers and excite the wonder of all—so many, indeed, that it would seem imperative that philanthopists should look to it and induce an elucidation of their true merits. When this is done, they will be relegated either to science, superstition or charlatanism. If they were decided to be scientific it would silence both superstition and charlatanism and add to medicine a valuable therapeutic resource. If they were proved to be engendered by superstition they would effect only the ignorant vagarist; if charlatanism, the protectors of the dear people would prohibit them. Unfortunately these perturbing questions have been ignored by the wise, considered myths or frauds and as such unworthy of continuous investigation. That these agitating dogmas have in severalty for their origin or derivation, a natural but peculiar nervous force is plausible, at least sufficiently so, as to warrant the necessity of scientific investigation. That there is a subtle inherent force in all persons which, under certain conditions, may be so exhibited as to influence other individuals mentally as well as physically, there can be but little doubt, and there are some individuals who, when their nervous system is in an abnormal state, are susceptible to certain influences, can be acted upon by another person so that their condition may be radically changed to a degree that a therapeutical result may be relied upon with as much certainty as that of many medical remedies. That diathesis temperament and idiosyncracy are peculiar conditions of the human system which influences therapeutics, is worthy of credence, and their practical appreciation being nearly always essential to the successful application of remedies, they should be studied in relation to these myths and their value decided upon, so that teachers could classify and give them their appropriate clinical applications. In these different conditions the nervous sensitiveness varies materially and experiments of a similar character will have diverse effects on each condition. Magnetic experiments having been generally made without due regard to the varying temperaments has given rise to the great diversity of opinion as to the value or truth of the theory. There are as many modes of exciting animal magnetism as there are varied remedial measures in medicine.

When writers and teachers of medicine shall have concluded that this subtle theory is entitled to a place in scientific lore it will be classified and its clinical applications discovered, it will then doubtless prove to be of manifold advantage to the profession of medicine and though it may not be a medicament of itself, it will prove to be a valuable adjuvant and by altering nervous tension give to other remedies greater efficacy. When the appropriate and proper exhibition of this remedy shall be understood, it will doubtless be found to be a harmless, costless and successful mode of treatment of very many of the diseases which affect mankind.

NASAL ECZEMA.—Give syrup iodide of iron, especially to children whose vitality is below par. It will bring about better results than all the local applications.—*Medical Summary.*

SCIATICA.—Wine of colchicum root, five to ten minims three times a day, often gives prompt relief in obstinate cases.

DR. J. W. WORK who graduated at the Kansas Medical College last spring has located at Dunavan, Kansas.

DR. E. P. ROGERS recently returned from a few month's trip to Galveston and southern Texas.

DR. R. S. MAGEE will leave for California this week where he expects to spend his vacation.

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WESTERN physicians are not personally very much interested in the dispensary war in the East, and yet it is a satisfaction to them on general principles to know that proper restrictions have finally been made, and rich people in the future will have to pay for medical care. It is a peculiar condition of affairs which allows the abuse of charity, and it is a peculiar principle of business with which only the medical profession seems to be afflicted. No other business man gives his time and knowledge even to the poor unless he is paid by the municipality. Why the physician should assume the duty of sacrificing his own business and that of his confreres for the purpose of giving instructions to those who desire to share the profits of what business he may have, is hard to answer. Those who wish to learn any other sort of business are seldom given the inducements offered the medical student. The price paid for his college work is seldom more than a pittance compared with the absolute cost, and it is very seldom that the preceptor receives any thing. The service rendered by the student is usually more than offset by the inconvenience and damage which he may cause. It strikes us that there should be a change in the custom of the profession. If a young man desires to study medicine let him pay for the instruction he receives from his preceptor either in cash or its equivalent in services. The colleges have been increasing their requirements for graduation, and at the same time proportionately lessening the price, and yet it is a fact that the cost of instruction is much greater. Thousands of physicians are being graduated every year, and it may be said that the practitioners all over the country are paying the expenses. Many of the colleges pay no salaries to their professors, and the receipts for fees barely pay the running expenses. In many of the smaller institutions assesments are made that they may continue to instruct other men in their line of business. We venture the assertion that no missionary association in the world is afflicted with more generous self sacrifice. Attempts are made all over the United States to secure laws governing the practice of medicine with but little effect, but there is no diminution in the number of physicians turned out by the colleges, and there seems an increase in prospective ones. The survival of the fittest is a good theoretical law when there are not too many of the fittest. Some one may secure the everlasting praise of the medical profession if he can devise a plan to relieve them of many of their burdens.

THE Pittsburg (Pa.) *Leader* is responsible for the charge that in that State incurable and dying patients are sometimes turned over to the poor authorities by the hospitals in order to keep down their death-rates.

"Schott Method" of Gymnastics in Cardiac Diseases.

American Medico-Surgical Bulletin.

Drs. S. Solis-Cohen and Harlotte West read a paper on this subject before the Philadelphia County Medical Society, January 27, 1897.

This treatment, says the author, is a portion of the so-called Nauheim treatment of cardiac diseases, which was inaugurated some twenty years ago by Drs. August and Theodor Schott.

The treatment carried out at Nauheim is directed toward the relief of the damaged heart, in cases of dilatation or broken compensation associated with valvular lesion, by action upon the peripheral vessels and blood-spaces; partly through the effect of thermal, saline and carbonated baths, and partly by a special system of gentle muscular exercise. The baths are an important but not an essential portion of the treatment. In some instances the baths alone are said to have been successful.

The method of exercise is called by Dr. Schott—resistance-gymnastics. "Swedish movements" are resistance-exercises too; but this system is differently carried out. "Gently-resisted movements" would, perhaps, convey the idea better. The patient makes very slight efforts with various muscles, and these are resisted by the operator very gently. As the treatment progresses the resistance is increased, calling upon the patient to put forth greater exertion. With the author's patients only twenty minutes exercise has thus far been attempted.

The exertion should be small, and the patient should be loosely clothed, and told to breathe quickly. The following rules are laid down:

1. Each movement is to be performed slowly and evenly, that is, at a uniform rate.

2. No movement is to be repeated twice in succession in the same limb or group of muscles.

3. Each single or combined movement is to be followed by an interval of rest.

4. The movements are not allowed to accelerate the patient's breathing, and the operator must watch the face for the slightest indications of (*a*) dilation of the alæ nasi; (*b*) drawing of the corners of the mouth; (*c*) duskiness or pallor of the cheeks and lips; (*d*) yawning; (*e*) sweating; and (*f*) palpitation.

5. The appearance of any of the above should be a signal for the interruption of the process; the limb or part being allowed to subside in a state of rest.

6. The patient must be directed to breath regularly and uninterruptedly, and should he find any difficulty in doing so, or if he show a tendency to hold his breath, he must be instructed to continue counting in a whisper during the progress of each movement.

7. No limb or portion of the body of the patient is to be so constricted as to check the flow of blood.

The exercises consist in motion with the lmibs, hands, feet and trunk; and they are so devised as to call into operation, according to a definite order and succession, nearly every voluntary muscle and system of muscles in the body.

The following is the list of exercises:

1. Arms extended in front of body on a level with shoulder, hands meeting; arms carried out until in line and brought back to original position.

2. Arms hanging at sides, palms forward; arms flexed at elbow until tips of fingers touch shoulder, back to original position; one arm only moved at a time.

3. Arms down, palms forward, arms carried outwards and upwards until thumbs meet overhead; back to original position.

4. Hands in front of abdomen, fingers flexed so that second phalanges touch those of opposite hands; arms raised until hands rest on top of head; back to original position.

5. Arms down, palms against thighs, arms raised in parallel planes as high as possible; back to original position.

6. Trunk flexed on hips; return to orignal position.

7. Trunk rotated to left—to right; return to original position.

8. Trunk flexed laterally.

9. As No. 1, but fists clenched.

10. As No. 2, but fists clenched.

11. Arms down, palms against thighs, each in turn raised forwards and upwards until arm is alongside of ear, then turned outward; arm descends backward.

12. Arms down, palms to thighs, both together moved backwards in parallel planes as far as possible without bending the trunk forward.

13. Thighs in turn flexed on trunk, opposite hand resting on chair.

14. Lower extremities in turn extended fully, and bent on trunk forwards and backwards to extreme limits of movements, opposite hand resting on chair.

15. Legs in turn flexed on thigh, both on chair.

16. Feet together, lower extremities in turn abducted so far as possible, and brought back to original position, opposite hand on chair.

17. The arms extended horizontally outward, are rotated from the shoulder-joint to the extreme limits forward and backward.

18. The hands in turn are extended and flexed on the forearm to extreme limits, and brought back in line with arm.

19. The feet in turn are flexed and extended to extreme limits and then brought back to their natural position.

The duration of the exercises is from twenty minutes to an hour and a half, an hour being the average at Nauheim even in the beginning. The following are the results stated to be obtained by the baths and exercises at Nauheim:

(1) Diminution in the frequency of the pulse, with increase in its force and fulness. (2) Contraction of the heart, as shown by diminution of the area of cardiac dullness, and recession of the apex-beat upward and toward the median line. (3) Slower and deeper breathing with a sense of lightness and relief in the chest. (4) A better color of the lips, and improved facial aspect; and (5) when the organ has been congested, a marked diminution in the size of the liver. Furthermore, after a few days of systematic administration of the exercises, there is usually observed marked, and often long-maintained diuresis.

The American Medical Association.

As Seen by the Cincinnati Lance-Clinic.

The professional event of the past week was the semi-centennial of this organization in Philadelphia. This meeting convened on the first day of June, was called to order by Dr. Senn, and duly welcomed by Hon. Charles Emery Smith, representing the governor of Pennsylvania, and Mayor Warwick. Prayer having been offered, the President delivered his address, which was in the main historic and appropriate to the occasion.

The committee of arrangements, under the leadership of Dr. H. A. Hare, had everything in complete order. At the opening of the first session, the large Academy of Music was filled to its utmost capacity, Dr. Hare announcing at the beginning of the session that already more than 1,400 delegates had registered. This large number was speedily increased to more than 2,000. The largest number ever previously registered at one meeting was in Cincinnati, in 1888, when 1,553 names were recorded. The registration of delegates at these meetings does not tell of twice as many other physicians who go to the meetings, and, from one cause or another, do not, or cannot, register. For instance, the Philadelphia societies were entitled to one representative for every ten of their membership list. The other nine-tenths usually attended the meetings, but not as elected delegates. It is fair to say there were in attendance at the Philadelphia meeting more than four thousand physicians, perhaps fully five thousand, during the second and third days.

President McKinley was escorted upon the platform by Dr. Pepper and made a brief address, expressing his high appreciation of the medical profession.

Dr. Gihon, of the U. S. Navy, presented the claims of the Rush monument, and in the enthusiasm of the occasion a very large subscription was raised.

As usual, the sections met in the afternoons, and were not only largely attended, but the transactions were of a very superior

order. The writer attended mainly the section on medicine, the meetings of which were held in the Broad Street Theatre, which at times was crowded even for standing room. Dr. Musser, chairman of the section, proved to be a model presiding officer, and not a single moment of time was lost or wasted.

The general address upon surgery, by Dr. W. W. Keen, was never surpassed for erudition, and subscribers to the *Lancet-Clinic* will be real good to themselves when they sit down and write a personal note to Dr. Keen and ask him to be good enough to send them a reprint of his address. Those who receive the *Journal of the Association* will see it there. It should be read by all general practitioners.

Mayor Warwick tendered a reception to visiting ladies, which was largely attended. The new Century Club also opened its doors to the ladies. In fact, the ladies were handsomely cared for just about all of the time, which actually afforded the wives, mothers, sisters and daughters of the visiting physicians a vacation long to be remembered. This is a feature of the meetings which grows preceptibly every year, and which is highly commendable.

All of the medical colleges and hospitals of the city were wide open to the members during the entire week. At each there were dinners, lunches and suppers; everything that a doctor's heart and stomach could wish was at his command during the week.

The American Academy of Medicine was well attended, and the proceedings of interest to its members and the American Medical College Association was largely attended by representatives from nearly all of these institutions. These two organizations are scarcely second in value to the American Medical Association. Their work is along the line of progressive educational advancement, which is ably seconded by the association representing the state board of registration and examiantion.

A notable feature of the meeting was "Jubilee Day."

At the general sessions, Dr. John B. Roberts acting as master of ceremonies, assembled one hundred prominent physicians who constituted an escort for Dr. N. S. Davis, and conducted this well-known Nestor of the association to the stage. The audience rose and vigorously applauded, Some words of compliment and congratulations from Dr. Roberts when he presented to Dr. Davis a memento of the occasion, after which Dr. Davis delivered, in a clear and loud voice, an oration in which he narrated the prehistory of the association. It was a masterly effort, and received with rounds of applause.

The address in medicine, by Dr. Austin Flint, of New York, was in matter scarcely such a production as the association should receive upon such an occasion, as it consisted mainly of a substantiation and defense of his own personal work, done some thirty years ago, which he stated was now being claimed as original by some European investigators—simply a case of stolen thunder, and its airing in this particular way was hardly in the right time and place. While the writer fully believes every word of Dr. Flint's statements, it is thought the use of another tribunal would have been in better taste.

On the second day Governor Hastings took occasion to add an additional welcome to those already extended, which was exceedingly happy and appropriate in language and delivery. The governor caught the hearts of his audience by his beautiful enconium to medicine.

The follywing officers were elected: Dr. George M. Sternberg, Washington, president; Dr. J. M. Matthews, Kentucky, first vice president; Dr. W. H. Thompson, Indianapolis, second vice president; Dr. F. H. Wiggins, New York, third vice president: Dr. T. J. Happel, Tennessee, fourth vice president; Dr. Henry P. Newmau, Illinois, treasurer; Dr. William B. Atkinson, Philadelphia, secretary; Dr. A. W. Jayne, Colorado, assistant; Dr. George W. Webster, Illinois, librarian; Dr. J. W. Graham, Denver, chairman of the committee of arrangements; Dr. Joseph Eastman, Indiana, and Dr. J. T. Priestly, Iowa, whose terms

expired this year on the board of trustees, were renominated, and Dr. Miller, Chicago, was named as the third member. All the members of the judicial council whose terms expired this year were renominated.

There was quite a contest between Denver and Columbus for the next meeting place, but Denver was chosen. An interference of a western railway agent is reported to have caused much dissatisfaction by making offers of free transportation to members of the nominating committee. This is a species of campaign influence that should bar any place of meeting. It is not charged that this proceeding was instigated by the Colorado delegation, but as there seems to be no doubt of the proposition having been made as mentioned by the railway man, it looks exceedingly bad, and such a course in the future should be arrested at once, and upon proof of such a proposition being made by any interested party should be made a sufficient cause for a rejection of the claim of any city.

The subject of railway rates was ventilated with some feeling. In a discussion of the subject the secretray told his story of effort upon his part in this relation. Poor man! he has done the very best he could, but there is a prejudice against him, which makes him worse than useless in this direction. Annually for years his friends have said: Let him serve another year, and we will see that his resignation is tendered. But he don't fulfill their obligations, but continues to hang on, and on, and on. A useful secretary would long ago have secured satisfactory railway rates. Oh, my!

It would be well for the association to adjourn, leaving the place of meeting in the hands of an executive committee, to be determined by railway and hotel offers. In the latter restaurant rates for the necessities of life should be enumerated. A copy of the bill of fare in the Hotel Walton in Philadelphia would afford not only food for thought, but act as a liberal educator for those who have not enjoyed the tickling delights of the financial numerals set opposite the diet table.

The Hotel Walton was selected as headquarters for the association. The hostelry is bang up, first-class, and up to date in every particular, and conducted upon a plane suitable only for multimillionaires and their wards. It is a luxurious delight to know that there are any number of physicians who are in this category, and that their labor cases are of those in which there is an involvement of muscle and nerve tension produced by clipping of coupons. We believe that is the term usually used in designating this affection. However, unfortunately, there are a whole lot of physicians who are not called in for professional attention in these cases, and are of necessity obliged to perspire from other sensory nerve irritations.

Individually, personally, and collectively, the Philadelphia profession did the handsome thing for members of the American Medical Association. Scores and hundreds of members were invited to and did cross their nether limbs beneath the mahogany in hospitable homes and in luxurious clubs.

Sand Filtration of Water.

Part of a Paper by George W. Fuller, Biologist in Charge of the Lawrence Experiment Station, State Board of Health of Massachusetts.

With the increase in our knowledge of epidemiology, and the causation of certain diseases, it has become clearer than ever before that more careful attention must be given to the quality of water supplies. It is true that drinking water is not the source of all deaths from diseases, the germs of which are known at times to be water-borne. Certain weight must be given to infected milk and other foods, to deficient drainage and sewerage, to neglect of laws of personal hygiene, and to other sources. Owing to the general absence of the results of sanitary analysis and of sanitary inspection, it is impossible to state at present how important is the part played in the transmission of diseases by each of these sources. In the case of water, however, it is positively known that its part in the causation of certain diseases is a prominent one; authorities

differ only as to the degree of its prominence.

Sanitarians clearly realize that opportunities for supplying large communities with pure drinking water from ground water sources, or from surface waters taken from uninhabited water-sheds, are becoming fewer and fewer. They recognize, furthermore, that the time has fully arrived when strenuous efforts must be made, in the interests of public health, to afford practicable and reliable means for freeing infected water supplies from disease-producing germs.

Bacteriology teaches us that water may be sterilized in three ways—by means of chemicals, by means of heat and by means of filtration. While chemicals have been of much aid in surgery by bringing about antiseptic and asepsis, it is very improbable that people would allow their drinking water to be drugged with chemicals, even with the view of removing dangerous bacteria—indeed, such a method might prove very dangerous in many cases. Heat is a very much safer means of sterilization, and its application in the household has doubtless done much good. But on the ground of practicability and economy; as well as of reliability, in the light of our present knowledge, each of these methods of sterilization for the removal of disease-producing germs from water supplies drops into relative insignificance when compared with filtration.

At the annual meeting of this association at Chicago last year, I had the honor of presenting to you some of the results of the investigation upon water-purification made by the State Board of Health of Massachusetts. It was then shown that all disease-producing bacteria in the Merrimack river at Lawrence may be removed by slow intermittent filtration through the fine sand and loam. But this is not all that the filter accomplished in the removal of bacteria. Out of 102 analysis, 58 indicated that the filtered water was absolutely sterile. Furthermore, the few bacteria which were found in the effluent from time to time belonged to the most hard species of water bacteria, many of which existed in the form of spores and which, let it be understood, are not killed by the ordinary application of heat or of chemicals.

Spring water obtained from favorable sources has repeatedly been found to be absolutely sterile. This is the result of natural filtration. This is Nature's method of purifying water, and the efficiency of natural filtration may be attributed to the retention of the bacteria within the filter under an unfavorable environment, The natural consequence of these unfavorable conditions is the survival of the fittest bacteria. Now, the evidence at hand shows that the disease producing bacteria are among the first to succumb, because farthest removed from their natural habitat. The non-pathogenic bacteria eventually perish, also, but unlike the case with the dangerous species, this does not happen until they have established a home and breeding place within the filter. Under the most favorable conditions filtration may be conducted so that no bacteria pass through with the filtered water. This can only be done under circumstances where the discharge from the filter is sufficiently removed, by time and distance, from the main seat of becteria activity.

We know that there are a score or more of germs which may produce specific diseases in mankind. There are many more species which are of the utmost benefit to the human race. They accomplish their work by decomposing and nitrifying processes, and convert objectionable organic matter. The benefit to mankind of the saprophitic bacteria cannot be overestimated. In this connection it is instructive to quote the conclusion from Pasteur's admirable investigations: "Whenever and wherever there is decomposition of organic matter, whether it be the case of an herb or an oak, of a worm or a whale, the work is exclusively done by infinitely small organisms. They are the important, almost the only, agents of universal hygiene; they clear away more quickly than the dogs of Constantinople or the wild beasts of the desert the remains of all that has had life; they protect the living from the dead; they do more, if there are still living beings, if, since the hundreds of

centuries the world has been inhabited, life continues, it is to them we owe it."

In no place in Nature are the opportunities for this bacterial activity more favorable than in filters. We find that the purification of water, with the removal of disease-producing germs by filtration, is Nature's method. We may go a step farther and state that in the purification of water that method is safest which follows most closely to Nature's method, and which is least dependent on human agencies.

Nature's method of filtration means the intermittent application of water to sand or sod in rates equal to the rainfall. The economic adoption of sand filtration, particularly as it has been practiced successfully for many decades in Europe, differs from Nature's method, strictly speaking, in that the rate of filtration is much higher and the surface of the sand or soil is covered with water for long periods of time. The essential, underlying principles, however, are the same, because the results are produced by bacterial activity which permanently exists in all filtering materials.

While the removal of pathogenic bacteria by chemicals, including coagulents, and by heat, will forever be directly dependent on human attention and judgment, I venture to predict that the day will come when the knowledge of filtration among sanitary scientists will be such that filters may be constructed and operated by which water, free from objectionable bacteria, will be supplied to hundreds of thousands of citizens and require the attention of a mere handful of men.

Castration of the Feeble-Minded.

The Medical Age.

One of our New York contemporaries is going into spasms of horror and virtue over a bill recently introduced in the Michigan legislature with a view to castration of epileptics and other feeble-minded individuals —a measure intended to limit the reproduction of these defects. The same bill also provides for a like penalty for rapists and habitual criminals—those of the latter who have served three or more terms in prison; criminal assault is also sought to be brought within the workings of the proposed law.

One contemporary suggests it would be cheaper and more effective if the penalty of decapitation was enacted. This is undoubtedly true. But unfortunately the mawkish sentiment which pervades modern civilization, that provides for the criminal oftentimes better quarters, better clothing, and better food than he has ever been accustomed to, will not tolerate anything to the betterment of the public at large or that in any way trenches upon a popular fetich. And when we read some of the lucubrations that have found place in alleged medical and scientific journals, it is readily realized in many individual instances "Othello's occupation" would speedily be "gone" if the reproduction of idiots and feeble-minded was to be limited. For all the boasted enlightenment of the nineteenth century, the old Phallic fetich still obtains, even though sedulously disguised; and some of our great philanthropists would rather see the entire country taxed to the utmost limit to support a constantly increasing population made up of criminals, insane, feeble-minded. idiots, epileptics, et al., than sanction any act that will tend to free society from one of its most onerous burdens. These same individuals would have no hesitancy in advocating the removal of a cancerous breast, of a sarcoma, or any other portion of the anatomy which had become morbid and threatening to the health and life of the individual or to the weal of the public; but when even greater ills accrue to the individual and to the public as a result of animal sexuality, the cry of "hands off" is immediately raised and these pious gentry roll up their eyes in well simulated horror.

This is a question that requires to be decided by the dictates of physiology and common sense. We have never advocated or opposed asexualization, believing it demands careful thought and study, barring all sentimental issues. Should such be made a part of any criminal code, the danger lies in too sweeping a general application, based perhaps on insufficient evidence, especially as regards rape and criminal assault. It might put a terrible weapon in the hands of vicious and designing females.